WHAT IS CLAIMED IS:

1. A contact sensor comprising:
an impact detection element movably connected to a housing part, a light source defining an emission surface, a receiving element defining a receiving surface arranged opposite the emission surface of the light source.

2. The contact sensor according to claim 1, wherein the receiving surface and emission surface are of substantially the same size.

3. The contact sensor according to claim 1, wherein the light source comprises at least one light-guiding fiber, whereby the emission surface is defined by the end of the light-guiding fiber.

4. The contact sensor according to claim 1, further comprising an intensity sensor, which is associated with the receiving surface and which generates an electrical signal.

5. The contact sensor according to claim 1, wherein the receiving surface is a reflective surface that directs the light emitted from the emission surface onto at least one further light-guiding fiber, connected to an intensity sensor, whose end defines a further receiving surface.

6. The contact sensor according to claim 1, wherein the impact element is movably connected to the housing part via at least one elastically bendable rod.

7. The contact sensor according to claim 6, wherein the elastically bendable rod is connected to the housing part via a baseplate.

8. The contact sensor according to claim 6, wherein the impact detection element, the baseplate , the rod and the receiving element are manufactured together in a single piece.

9. The contact sensor according to claim 4, wherein the electrical signal serves to control a movement operation.

10. An apparatus for protecting a protruding component comprising:
a housing part to which the protruding component is connected, an impact detection element movably connected to the housing part, a light source defining an emission surface, a receiving element defining a receiving surface arranged opposite the emission surface of the light source.

11. The apparatus according to claim 10, wherein the receiving surface and emission surface are of substantially the same size.

12. The apparatus according to claim 10, wherein the impact element surrounds at least partially the component to be protected.

13. The apparatus according to claim 10, wherein the light source comprises at least one light-guiding fiber, whereby the emission surface is defined by the end of the light-guiding fiber.

14. The apparatus according to claim 10, further comprising an intensity sensor, which is associated with the receiving surface.

15. The apparatus according to claim 10, wherein the receiving surface is a reflective surface that directs the light emitted from the emission surface onto at least one further light-guiding fiber, connected to an intensity sensor, whose end defines a further receiving surface.

16. The apparatus according to claim 10, wherein the impact detection element is movably connected to the housing part via at least one elastically bendable rod.

17. The apparatus according to claim 14, wherein the intensity sensor generates an electrical signal proportional to the power level of the light striking the emission surface, which serves for the open-loop or closed-loop control or monitoring of a movement operation.

18. A high-precision measurement machine comprising:
a housing part to which a optical component is connected, an impact detection element movably connected to the housing part, a light source defining an emission surface, a receiving element defining a receiving surface arranged opposite the emission surface of the light source.

19. The high-precision measurement machine according to claim 18, further comprising:
an intensity sensor, which is associated with the receiving surface and which generates an electrical signal proportional to the power level of the light striking the emission surface.

20. The high-precision measurement machine according to claim 19, further comprising:
a control unit, which receives the electrical signal and which controls a movement operation.